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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,802

07/12/2006

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06085

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23338 7590 11/13/2008
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EXAMINER

DESAI, NAISHADH N

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

11/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Objections

1. Claim 29 is objected to because of the following informalities: It appears as if the word "to" is missing from the claim language. Current claim reads as "...a beam which is be driven ...". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Barthalon et al (US 3707924).

2. Regarding claim 15, Barthalon et al teaches:

Machine with an electromechanical converter, comprising (abstract):

a closed tubular cylinder having tight end chambers (Fig 20,231);

a linear movable piston (Fig 20,234) supporting a row of centrally placed tubular magnetic elements in the form of permanent magnets or coils (Fig 20,241), and arranged within the closed tubular cylinder to operate as a working element in a motor or a generator (abstract and Fig 20,231 and 325) and which is provided with magnetic elements (abstract) which establish an outwardly directed electrical field of force (Col 17 ll 58-63),

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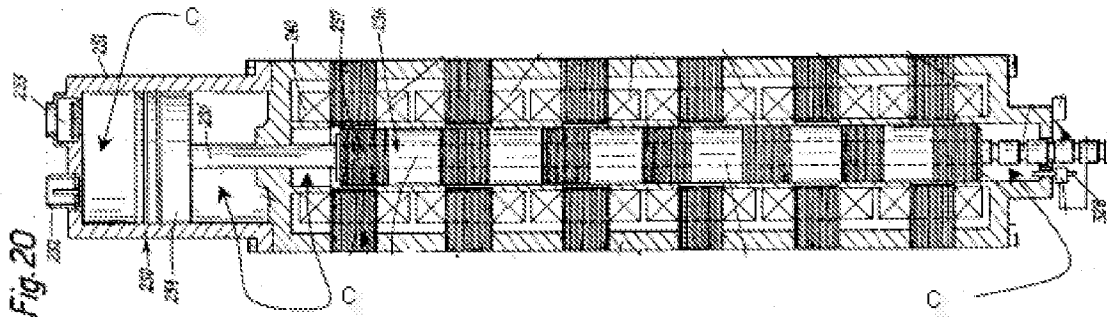
the end chambers being sufficiently tight that at each end of the piston there is formed a gas spring of high pressure providing a resonance-effective arrangement (Fig 20, C below, also Cols 3 II 63-68, C 4 II 1-5, C17 II 12-17,43-65); and

a row of tubular coordinated coils (Fig 20,240) or permanent magnets disposed around the piston (Fig 20,234) within the cylinder (Fig 20,231) for increasing piston area of the machine and/or length of stroke of the piston (Col 17 II 28-30),

interaction between magnetic fields of the coordinated coils or permanent magnets and the magnetic elements obtaining energy transmission upon axial movement of the piston in the cylinder (Fig 20 and Col 17 II 28-31).

3. Regarding claim 16, Barthalon et al teaches that the piston comprises a concentric row of tubular magnetic elements which are placed with a mutual intermediate gap (Fig 20,237,241), in which gaps are arranged tubular coil arrangements (Fig 20,240) with the coordinated coils for increasing the area of the piston.

4. Regarding claim 17, Barthalon et al teaches that the piston (Fig 20,234), is at least on one end, connected to a piston bar (Fig 20,235), said piston bar being guided out through an end chamber for transferring mechanical energy to or from the machine (Fig 20,330)



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 18-19 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthalon et al (US 3707924).

5. Regarding claim 18:

Machine according to claim 16, characterized in that the mass of the piston is over 4 kg.

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Barthalon et al discloses the claimed invention (including “oscillation of a pump of a large size” in Col 18 l 39) except for the shape or size of the piston to be over 4 kg. It would have been an obvious matter of design choice to make the mass of the piston to be over 4kg, since such a modification would have involved a mere change in the shape of a component. A change in shape or size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

6. Regarding claim 19:

Machine according to claim 16, wherein the machine has a length of stroke of about 10 cm and the piston has an area greater than 0.03m^2 .

Barthalon et al discloses the claimed invention (including the stroke exceeding a predetermined value in Col 18 l 49) except for the shape or size of the piston to be greater than 0.03 m^2 . It would have been an obvious matter of design choice to make the area of the piston greater than 0.03 m^2 , since such a modification would have involved a mere change in the shape of a component. A change in shape or size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

7. Regarding claim 27:

In combination, a machine according to claim 15, and an element which is constructed and arranged to be vibrated, the machine being placed directly on the element without a piston bar.

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Barthalon et al discloses the claimed invention except for mentioning that the device (without a piston bar) can also be placed on an element to be vibrated. Also Col 4 ll 51-57 teaches that the device can be used for a drilling platform. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham, 2 USPQ2d 1647 (1987)*.

8. Regarding claim 28:

Combination according to claim 27, wherein the machine is constructed and arranged to be coupled on the rear of the bit of a drill steel for drilling for oil and mining operations, to generate hammer drilling with an ordinary drill.

9. Regarding claim 29:

Combination according to claim 27, wherein the machine is constructed and arranged to be coupled to a tube or a beam which is to be driven down into the ground.

As per claims 28 and 29 above, Barthalon et al discloses the claimed invention except for mentioning that the device can also be used as a drill for drilling oil or driven into the ground. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham, 2 USPQ2d 1647 (1987)*.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthalon et al (US 3707924) in view of Acker et al (US 2003/0047900)

10. Regarding claim 20, Barthalon teaches:

Machine according to claim 16, wherein there is a pressure inside the cylinder at each side of the piston (Fig 20,234) in the end chambers (Fig 20, A and B) over 10 bar.

(Fig 20 clearly shows that the pressure inside the piston chambers (above and below the piston) are controllable by the valves (elements 232 and 233). Barthalon does not literally teach that the pressure can be over 10 bar. Acker et al (paragraph [0064-65]) teaches that the pressure in the device can be varied up to 20 bar. It would have been obvious to a person having ordinary skills in the art to modify the device of Barthalon with the teachings of Acker et al and make a device capable of handling pressures over 10 bar. The motivation to do so would be that it would allow one to make a device intended for a particular environment or purpose by allowing one to implement active springing by means of a gaseous medium (paragraph [0010] of Acker et al.

11. Regarding claim 21, Acker et al (paragraph [0064-65]) teaches that the pressure in the device can vary up to 20 bar. It would have been obvious to one having ordinary skills in the art at the time the invention was made to make the device capable of handling pressures greater than 30 bar, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

Response to Arguments

13. Applicant's arguments with respect to claims 15-21,27-29 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NND

/Dang D Le/

Primary Examiner, Art Unit 2834